2. Description of the Egg of Parra gallinacea. By John Gould, F.R.S. &c.

The ground-colour of the egg of this species is of a dark shining raw-sienna tint, over which are traced in various directions a series of broad and fine hair-like contorted lines of brownish black, which, by occasionally uniting laterally and crossing each other, form here and there large blotches. Although these markings are of the same character on each egg, they are somewhat differently distributed: thus, on one of the two I possess, they are more numerous at the larger end, and absent at the smaller; while, on the other, they are more abundant at the smaller, and less so at the larger extremity. The eggs are one inch and an eighth in length by seven eighths of an inch in breadth. They are, moreover, rendered remarkably conspicuous by the singularly pointed form of the smaller end, and by their small size as compared with that of the bird, but above all by the form and disposition of the markings, which are as if traced by the hand of a person who had amused himself by attempting to cover the surface with fantastic streaks, blotches, and contorted curves from end to end.

The two examples above described were most kindly sent to me from Eastern Australia, by Mr. Hills, through the instrumentality of his relative, Sir Daniel Cooper, Bart.

3. Characters of New Species of Crustaceans discovered by J. K. Lord on the Coast of Vancouver Island. By C. Spence Bate, F.R.S.

[The following new species of Crustaceans, collected on the east side of Vancouver Island, were kindly named, described, and figured for me by Mr. Spence Bate. Some of them were dredged in from 8 to 10 fathoms of water; the rest were collected between tide-marks.

Mr. Spence Bate says, in speaking of the collection generally, "The extremely opposite and varied localities in which many of the species here represented have hitherto been found, suggest the idea that Vancouver Island corresponds with the extreme limit between a northern and a tropical fauna." "It is only in this way I can account for finding the representatives of tropical species, with others that are found only (on the eastern coast of Asia) in the Arctic and, perhaps, North Atlantic Oceans." That he is quite correct in this assumption I think there can be little, if any, doubt; for not only does it apply to the Crustaceans, but with equal force to the Molluscous groups. Several new species of shells, collected at the same time and in the same localities as the Crustaceans, which were named and described by Dr. Baird, with appended notes by myself, and published in the Society's 'Proceedings' of last year, are identical in some cases, in others closely allied to known species from Japan, Australia, and the north shores of our own island.

The tidal irregularities of this coast are perfectly inexplicable. In

May, June, and July, during the twenty-four hours there is but one high and one low water. At the change and full of the moon, high tide happens near midnight, and varies but little as to time during the three months. In August, September, and October there are two high and two low tides in the twenty-four hours. Then in the winter months, November, December, and January, the regular twelve-hour tides recur; but high water is at twelve in the day, instead of twelve at night. The spring tides range from 10 to 12 feet, the neaps from 5 to 8.

The temperature of the sea taken during the summer months near the surface ranges from 52° to 56° F. The sea-water seldom, I may say never, looks clear, but always presents a turbid muddy appearance, as if a large quantity of sand was mixed with it. This may in some measure be accounted for by assuming that strong undercurrents flow from north to south, and, sweeping past the island and being (from their low specific gravity) close to the bottom, stir up the sand and mud. The sea-bottom in and adjacent to the numerous bays, harbours, and long canals which, like the fiords of Norway and Sweden, everywhere intersect the mainland and island coasts, varies in accordance with the character of the bounding rocks: where trap, soft clay-slates, or felspathic rocks form the coast-line, a thick blue clay is the usual bottom; where grits and sandstones, there it is sandy.

Little, if indeed anything, is as yet known of the deep-sea productions from the west side of the island, which will afford a rich harvest to future explorers.—J. K. Lord.]

Pugettia lordii, n. s.

Carapace quadrate behind the orbits; the anterior portion abruptly narrowing and produced into a double rostrum, the horns of which divaricate. The anterior extremity of the orbital margin is produced to a sharp point—that is, elevated slightly above the beak; the posterior extremity is defined by a distinct fissure. The anterior hepatic region is produced by a tooth immediately posterior to the postorbital fossa, laterally extended to an obtuse tooth or point, and posteriorly separated from the branchial regions by a decided fossa or lateral constriction. The branchial region is laterally produced to a strong anteriorly-curved point. The dorsal surface is tolerably smooth, exhibiting but faintly the marking of the internal viscera. The eyes are small, and reach but little beyond the orbital margin. The external antennæ have the first joint fused with the carapace, the second and third compressed and arcuate, and terminate in a smooth flagellum. The first pair of pereiopoda are moderately long, having the meros triangulate, the upper angle forming a prominent carina that extends along, but terminates abruptly a little short of, both extremities of the joint; the carpus is tricarinated; the propodos is laterally compressed, and forms about half the length of the limb, and is about one-third its breadth. The dactylos is slightly curved and slightly serrated on the inner margin, and antagonizes at the extremity with the produced propodos. The second pair

of pereiopoda are nearly as long as the first, but much more slender, having the meros and propodos subcarinated. The three posterior pairs are shorter. The pleon is small and narrow, the second and third segments being the broadest, while the seventh is abruptly narrower than the sixth, and forms a triangular plate. The female differs from the male in being more protuberant over the stomachal region, and consequently the rostrum is more depressed; anteriorly, there is less development of the lateral branchial teeth, and there is a relatively greater distance between the fifth pair of pereiopoda. The pleon is almost circular, and covers the entire surface of the ventral region.

The colour of the animal is of a reddish brown, which increases in brightness as it approaches towards the extremity of the chelæ. In one or two young females the carapace was smooth and glabrous.

Found in tolerable abundance in Esquimalt and Victoria Harbours, and, indeed, in all the sheltered inlets along the mainland coasts from the mouth of the Fraser to San Francisco. Dredged in about eight fathoms of water, but easily obtained in pools at extremely low tides. Its favourite haunt is under a large flat stone, or hid under the seaweed that fringes the margin of a pool. The specimen from which the drawing was made was taken in Esquimalt Harbour.

Oregonia longimana, n. s.

Carapace coarsely granulated or minutely tuberculated, free from hairs, except upon the rostrum, which is slender and twice the length of the interorbital space. Pleon, in the male, narrow, concave upon each side, corresponding with the fourth, fifth, and sixth segments. Telson rather broader than the preceding segment, and emarginate at the terminal extremity. The first pair of pereiopoda are very long, being twice the length of the carapace, and much longer than in either of the species described by Dana and Stimpson; the meros reaches quite to the extremity of the rostrum, and is furnished with two or more longitudinal rows of small granulated tubercles; the propodos is rather longer than the meros, and its breadth is equal to about one-third of its length; the dactylos is about one-third the length of the propodos, slightly curved and minutely serrated on the inner margin, which impinges throughout its entire length upon the produced extremity of the propodos. The three succeeding pairs of pereiopoda are imperfect in the only specimen procured; but the last pair are long, cylindrical, slender, and terminated in a powerful dactylos.

This specimen was obtained in Esquimalt Harbour, and in its habits and general distribution it is very similar to the preceding.

Platycarcinus recurvidens, n. s.

This very pretty species may easily be distinguished by the sharp points of the inner lateral teeth, granulated or minutely baccated along the margin, and having the apex recurved. The intraorbital margin is three-lobed and granulated, the central lobe being the smallest. The dorsal surface of the carapace is granulated on the

prominent lobes in the larger specimens, but almost smooth in the young. The first pair of pereiopoda have also lines of granulations along the outer surface of the propodos and carpus.

Dana has merged this genus into that of *Cancer*; but the greater length of the animal in relation to its breadth is a very convenient generic diagnosis, and one that appears to correspond with Milne-Edwards's description relative to the more longitudinal position of the two pairs of antennæ.

The specimens were obtained in Esquimalt Harbour. It frequents pools between tide-marks; but Mr. Lord thinks it is common everywhere along the Oregon coast.

Chlorodius imbricatus, n. s.

Carapace having the posterior portion smooth, the anterior being rough with flattened prominences that form an irregularly imbricated surface. Anterior margin slightly baccated. Antero-lateral margin five-toothed, the central tooth being the largest, the posterior the most prominent. A small secondary tooth stands upon the anterior surface of the fourth and fifth teeth. The first pair of pereiopoda are short and robust; they have the carpus deeply corrugated upon the external surface, so also the propodos; the dactylos is ribbed upon the upper surface; a slight rib is also present upon the carpus of each of the four succeeding pairs of perciopoda.

Only a single specimen of this pretty little species was obtained. It was dredged in about eight fathoms of water in Esquimalt Harbour.

Cryptolithodes typicus.

Cryptolithodes typicus, Brandt, Bull. de l'Acad. de St. Pétersbourg, 1849, vii. 175; Stimpson, Crust. et Echin. of Pacific North America, Journal of the Boston Soc. of Nat. Hist. vol. vi. p. 472, pl. 20.

A specimen of this species, which was first described by Brandt, and afterwards more fully, as well as figured, by Stimpson, was taken in Rosario Strait, Vancouver Island, as well as in Upper California.

The male, which has not hitherto been described, differs from the female in being less produced posteriorly. The posterior margin, instead of being projected in an arch inversely corresponding with that of the anterior margin, traverses a line that is nearly direct from side to side, slightly posterior to the points of the broadest diameter in the carapace. The pleon is triangular, and smaller and narrower than in the female, having the lateral margins more straight and symmetrical.

The only male specimen in the collection is smaller than the female, and the surface generally more tuberculated. The right propodos of the first pair of pereiopoda is larger than the left, and is so well developed as scarcely to be capable of being folded within the limits of the carapace. The length of the male animal, from the extremity of the rostrum to the centre of the posterior margin of the carapace, is about $\frac{3}{4}$ths of an inch; its breadth, from the point of one lateral extremity to the other, is about $1\frac{1}{4}$ inch.

The size of the largest female in the collection is in length about $1\frac{1}{4}$ inch, and breadth about 2 inches.

CRYPTOLITHODES ALTA-FISSURA, n. s.

Female.

This species may readily be detected from the two previously known by the smoothness of the carapace, propodi, and pleon, and more distinctly by the deep orbital notch on each side of the rostrum.

The carapace is nearly as broad again as long, and produced considerably posteriorly to the cardiac elevation—a feature that appears to belong to the female. The rostrum is broad, flat, and rectangular. The antero-lateral margins are produced so far anteriorly as to be nearly in a line with the extremity of the rostrum; a deep notch, in which the eyes are situated, exists on each side of the rostrum. The anterior margin is slightly marked with distant small points. The posterior margin is quite smooth and even. The dorsal surface is quite smooth, and pencilled in light red upon a yellowish ground, the red pencilling being fine and delicate, following the contour of the margin and surface of the carapace.

The pleon is subsymmetrical and very smooth, and planted considerably within the posterior margin of the carapace. The second segment (first visible) has the marginal plates fused with the central. The sixth segment is without lateral plates; and the telson is situated beneath, and anterior to, the posterior extremity of the sixth segment.

The eyes are small, and placed upon peduncles that gradually taper from the base to the extremity. The first pair of antennæ are short, and developed upon the type of those of the Brachyura; but the first joint is reduced to a size that is only about twice the diameter of the second. The second pair of antennæ are but little longer than the first, and are furnished with a broad round scale at the third joint, and a terminal flagellum that is about the length of the fifth joint of the peduncle. The squamiform appendage is circular and disk-like; the inner margin is straight or somewhat excavated.

The second pair of gnathopoda have the third joint much broader than the fourth (the secondary appendage reaches not to the extremity of the third), and have the terminal joints small and rudimentary. The first pair of perciopoda are subequal in the female, the propodos upon the right side being somewhat larger than that on the left; the surface is smooth and even, and the dactylos is furnished with a prominent carina that terminates abruptly near the basal articulation, and loses itself gradually towards the apex. The fifth pair of perciopoda are completely hid from view; the three basal joints are short; the two terminal ones subequally long, and furnished with a copious brush of strong cilia. These appendages are folded together and enclosed within the branchial chambers, where they, no doubt, fulfil the office of the flabella of the highest forms of Crustacea—affording an interesting illustration of an organ being converted, by the force of circumstances, from its original purpose to the fulfilment of another, for which it was apparently most unsuited.

PETALOCERUS BICORNIS, n. s.

Carapace triangular, anteriorly produced into two horizontal horn-like processes; tuberculated with nodulated prominences all over the surface, but furnished with a series of large tubercles corresponding in line with the external margin of the carapace; the antero-lateral margin constricted between the branchial and hepatic regions, furnished posteriorly to the orbit with two strong, blunt processes, and, posteriorly to the central constriction, armed laterally with two distant narrow processes, and posteriorly with six closely situated large, round tubercles.

The pleon is nearly symmetrical, being rather larger on the left than the right side. Each segment is defined by a marginal prominence; that upon the left side is continued from near the middle to a process that terminates in a point or tooth at the side, but that on the right becomes confluent with a posterior ridge, and forms an irregular circle, the centre of which is deeply depressed.

The eyes are small, of a green colour, and surmounted on denticulated peduncles. The first pair of antennæ consist of three equal-lengthed joints (of which the first is the more robust), together with a short, stout, pilose flagellum and a slender secondary appendage. The second pair of antennæ have a compound scale, consisting of two large and two short compressed processes, and the third joint is furnished with two or three sharp, strong processes.

The first pair of pereiopoda are chelate and strong, echinated with blunt-pointed spines, and terminate in fingers that are flattened at the extremity, and furnished upon the outer surface with numerous tufts of hair, that spring from the summits of the numerous tubercles that are found there. The second, third, and fourth pairs of pereiopoda are more slender than the first, resemble one another very considerably, and are furnished with short, sharp, and slightly curved dactyli. The fifth pair of pereiopoda are rudimentary appendages; they consist of but five joints, the last of which terminates in a blunt extremity that is furnished with a considerable brush of hair, and is probably used for the purpose of cleansing the branchial appendages.

The pleopoda are present in the female, with the exception of the first pair (which are small) only upon the left side of the pleon, as exemplified in our specimen.

This species differs from White's *P. bellianus* in having a horizontal bifurcate rostrum to the carapace, being more distinctly tuberculated, and in the pereiopoda being more strongly spinated.

This handsome species is of a yellow colour, picked out with purple between the tubercles.

It was dredged in Esquimalt Harbour, in ten fathoms of water.

HIPPOLYTE ESQUIMALTIANA, n. s.

Rostrum as long as the carapace, armed with four teeth at the base, the posterior being just behind the orbits, and the anterior being near the centre of the rostrum, the anterior half of the rostrum being straight and smooth. The inferior margin is excavate at the

base, and furnished with seven small teeth, the four posterior being near together and posterior to the centre of the rostrum, the three others being further apart, the most anterior being subapical.

The third segment of the pleon is dorsally produced posteriorly to a point. The eyes are small; the superior antennæ have the primary ramus of the flagellum tolerably robust, and reaching to about two-thirds the length of the rostrum, the secondary slender and longer than the primary. The inferior antennæ have the scale reaching to about three-fourths of the length of the rostrum, rounded at the apex, subapically furnished with a small tooth upon the external margin; the flagellum (wanting).

First pair of pereiopoda short, robust, chelate; second pair long, slender, and chelate; the posterior terminating in a robust dactylos.

Taken in Esquimalt Harbour.

Mœra fusca, n. s.

The body is long and slender; the superior antennæ are about half the length of the animal, the peduncle being scarcely longer than the flagellum, the secondary appendage being half the length of the primary, the second joint of the peduncle being about the same length as the first. Second pair of gnathopoda having the propodos large; palm without teeth, and defined by a small pointed process. Posterior pair of pereiopoda having the posterior margin of the base smooth.

In its general appearance this species bears a near affinity to *Mœra grossimana*, as well as to *M. tenella*, from the Feejee Islands, the only appreciable distinctions being in the shorter length of the second joint of the antennæ, the absence of teeth from the palm of the hand in the second pair of gnathopoda, and in the even margin of the last (the only remaining) pair of perciopoda, and perhaps also in the shortness of the peduncle of the ultimate pair of pleopoda.

Only one specimen of this species is in the collection; and that was taken from a sponge dredged in about ten fathoms of water in Esquimalt Harbour. It is of a brownish colour.

Jœra wakishiana, n. s.

Anterior margin of the cephalon nearly straight; pereion having the sides subparallel, the greatest width being at the sixth segment. Pleon having a double excavation on the posterior margin, the central point not extending beyond the extremity of the sides. Superior antennæ reaching to the extremity of the fourth segment of the inferior. Inferior antennæ nearly two-thirds the length of the animal. Posterior pair of pleopoda as long as the posterior margin of the pleon, terminating in two styliform rami, each of which is tipped with a few short hairs.

This species was taken from a sponge dredged in about eight fathoms of water in Esquimalt Harbour.

The specific name is derived from the circumstance of the animal having been found on the territory of the tribe of Wakish Indians.

Tanais loricatus, n. s.

The only specimen in the collection is imperfect. The first segment of the pereion appears to be imperfectly fused with the cephalon. Inferior antennæ scarcely half the length of the superior. First pair of gnathopoda having the propodos ovate; dactylos short and tumid, shorter and less pointed than the digital process of the propodos. Pereiopoda having the first three joints short and broad, being affixed to the side of the pereion like plates of mail (hence the specific name); they terminate in short pointed dactyli, and have the propodi armed with two lateral rows of strong, black, pointed teeth.

This species was taken from the hollow of a sponge dredged in Esquimalt Harbour, at the depth of about ten fathoms.

Ione cornuta, n. s., Bate.

The male differs from the description of the European species chiefly in having the caudal extremity terminating obtusely, and in having shorter antennæ.

The female has the antero-lateral hornlike process of the cephalon curved posteriorly. The pereion is not quite equilaterally developed. The coxæ of the four anterior pairs of pereiopoda are round, and all attached to the antero-lateral margin of the segments of the pereion. The coxæ of the three posterior are the larger, and produced posteriorly to a point. The pleopoda are long, and fringed with arborescent branchiæ.

This is the only species known, besides that taken by Colonel Montagu on the southern coast of England.

Length, male $\frac{1}{4}$, female $\frac{3}{4}$ of an inch.

Taken attached to the branchia of *Callianassa longimana*.

4. Descriptions of New Species of Land Shells from the Islands of the Central Pacific. By W. Harper Pease, Esq., of Honolulu. (Communicated by Dr. P. P. Carpenter.)

[Mr. Pease having sent to me specimens of most of those land shells of the Central Pacific Islands which he regards as new, they have been carefully compared with the species of Pfeiffer, Reeve, Gould, and other authors in the Cumingian Collection. Those which Mr. Cuming regards as new are here described: a list of the remainder, with the synonyms as determined by Messrs. Cuming and H. Adams, is given for the sake of the many naturalists in this and other countries who have received them under Mr. Pease's MS. names. It must be remembered that Mr. Pease may have reasons for regarding them as distinct, which do not appear on the face of the specimens. Of the shells placed at my disposal by Mr. Pease, the first has been presented to the Cumingian Collection, the second to that of the Smithsonian Institution.—P. P. C.]